REMARKS:

Reconsideration and further examination of this application is respectfully requested. Please withdraw claims 39-44 without prejudice or disclaimer of the subject matter contained therein. Claims 1-38 and 45-61 remain in the application.

A. Rejection of Claims Under 35 U.S.C. § 102(b)

1. The Examiner has rejected claims 1-4, 13-16 and 25 under 35 U.S.C. §102(b) as being anticipated by Antoni et al., U.S. Patent No. 5,236,586.

Applicants respectfully traverse. Applicant claims in independent claims 1 and 14 "a first ring **(108)** joinable to said first end **(410/412** (of said housing **102))**" (page 4, lines 11-12 and FIG. 4 in the specification). The ring **15** of Antoni et al. **is not joined** to the first end **19b/13b** of the housing **1b**. Instead, the end cap **4b** is joined to the first end **19b** of the housing **1b** with glue **21b**. See Antoni et al. col. 4, lines 51-54 and FIG. 3.

Applicant also claims in independent claims 1 and 14 "a first flange cap **(106)** joinable to said first ring **(108)** forming a first seal" (page 5, lines 25-26 and FIG. 4 in the specification). The end cap **4b** of Antoni et al. **is not joined** to ring **15**, but to end wall **3b** with glue **20b**. See Antoni et al. col. 4, lines 50-51 and FIG. 3. Thus, Applicants seal is between the flange cap **106** and the first ring **108**. The seal of Antoni et al. is between end cap **4b** and end wall **3b**.

Thus the structure of Applicants invention, and how it is connected, and the location of the seal is different from that of Antoni et al. Since the Antoni et al. reference does not disclose expressly or inherently all of the elements and limitations of Applicant's independent claims 1 and 14, the Antoni et al. reference does not meet the statutory standard and should be withdrawn. Thus, Applicant believes that claims 1 and 14 are not anticipated by Antoni et al. Accordingly, Applicant respectfully requests retraction of the Examiner's rejection under 35 U.S.C. §102(b).

Claims 2-4, 13, 15-16, and 25 depend directly or indirectly from independent claims 1 or 14 and include all the elements and limitations thereof. As a result, and in light of the foregoing remarks concerning independent claims 1 and 14, Applicant likewise believes that claims 2-4,

13, 15-16, and 25 also overcome the Examiner's rejection based on Antoni et al. under 35 U.S.C. §102(b), and retraction of that rejection in respect to these claims is respectfully requested.

2. The Examiner has rejected claims 26-30, 34 and 35 under 35 U.S.C. §102(b) as being anticipated by Antoni et al., U.S. Patent No. 5,236,586.

Applicants respectfully traverse. Applicant claims in independent claim 26 the process of preparing the Filter Device **100** by "joining a first ring **(108)** to a first end **(410/412)** of a housing **(102)**" (page 4, lines 11-12 and FIG. 4 in the specification) and "joining a first flange cap **(106)** to said first ring **(108)** forming a second seal" (page 5, lines 25-26 and FIG. 4 in the specification). In the process of preparing the filter device of Antoni et al., the ring **15 is not joined** to the end **19b/13b** of the housing **1b** and the end cap **4b** of Antoni et al. is not joined to the ring **15**, but to end wall **3b** with glue **20b**. Applicant's seal is thus formed between the flange cap **106** and the first ring **108**. The seal of Antoni et al. is between end cap **4b** and end wall **3b**.

Thus, the process of preparing Applicants invention, and how it is connected, and where the seal is formed is different from that of Antoni et al. Since the Antoni et al. reference does not disclose expressly or inherently all of the elements and limitations of Applicant's independent claim 26, the Antoni et al. reference does not meet the statutory standard and should be withdrawn. Thus, Applicant believes that claim 26 is not anticipated by Antoni et al. Accordingly, Applicant respectfully requests retraction of the Examiner's rejection under 35 U.S.C. §102(b).

Claims 27-30, 34 and 35 depend directly or indirectly from independent claim 26 and include all the elements and limitations thereof. As a result, and in light of the foregoing remarks concerning independent claim 26, Applicant likewise believes that claims 27-30, 34 and 35 also overcome the Examiner's rejection based on Antoni et al. under 35 U.S.C. §102(b), and retraction of that rejection in respect to these claims is respectfully requested.

B. Rejection of Claims
Under 35 U.S.C. § 103(a)

1. The Examiner has rejected, in the alternative, claims 26-30, 34 and 35 under 35 U.S.C. §103(a) as being unpatentable over Antoni et al., U.S. Patent No. 5,236,586.

Applicants respectfully traverse. Applicant repeats the remarks made above in Sections A1 and A2. The structure of Antoni et al. requires only one joining of the end cap to the housing, with a ring internal therein. Applicants invention, on the other hand, is entirely different, requiring **two separate joinings**, the ring **108** to the housing **102**, and the end cap **106** to the ring **108** forming the seal in a **different location** than the seal of Antoni et al. There is no suggestion or motivation in Antoni et al. for one skilled in the art to adopt the structure of Applicants invention, and the structure of Antoni et al. teaches one skilled in the art away from the different structure of Applicants invention. Thus, Applicant believes that claims 26-30, 34 and 35 are not obviated by Antoni et al. Accordingly, Applicant respectfully requests retraction of the Examiner's rejection under 35 U.S.C. §103(a).

2. The Examiner has rejected claims 8-11, 20-23, 31-33, and 55-58 under 35 U.S.C. §103(a) as being unpatentable over Antoni et al., U.S. Patent No. 5,236,586 in view of Lacy et al., U.S. Patent No. 6,280,619.

Applicants respectfully traverse. First, Applicant believes the Examiner meant to cite claims 30-33, and not 31-33, since claims 8, 20, and 30 are identical in structure. Applicant is making this assumption, and is responding accordingly.

a. Regarding claims 8, 20, and 30, Antoni et al. does not teach spin welding, but does teach welding. However, Antoni et al. **does not teach nor suggest** welding the ring **15** to the first end **19b/13b** of the housing **1b**, nor the welding of the end cap **4b** to the ring **15**, but instead teaches welding the end cap **4b** to the end wall **3b** with glue **20b** as discussed in the remarks above. Lacy et al. teaches spin welding, but also **does not teach nor suggest** spin welding the ring to the end of the filter housing, nor the spin welding of the flange cap to the ring, but instead teaches spin welding the end cap **26** to the end of the filter body **22** (see FIGS. 4 and 5), and Lacy et al. does not even have a comparable ring structure. Thus, combining the spin welding teaching of Lacy et al. with the structure of Antoni et al. cannot arrive at applicants invention. Thus, Applicant believes that claims 8, 20, and 30 are patentable over Antoni et al. in view of Lacy et al. Accordingly, Applicant respectfully requests retraction of the Examiner's rejection under 35 U.S.C. §103(a) for these claims.

b. Regarding claims 9, 21, and 31, Applicants claim "a first plurality of nubs (**120**) on an outer portion of said first ring (**108**)" and "a second plurality of nubs (**120**) on an outer

portion of said second ring (**108**); wherein said first and second plurality of nubs assist in said spin welding" (page 4, lines 18-20 and FIGS. 1-3 in the specification). The examiner cites in Lacy et al. spin weld ledge **46** (col. 3, line 51 and FIGS. 4 and 5) as a "nub", but this structure is only an **annular ring** with no protrusions on an outer surface that can be called "nubs" to assist with spin welding. The inner surface of spin weld ledge **46** of the body **22** is forced against the outer surface of spin weld tail **72** (also an annular structure) of the cap **26**, and rotated at high torque about their common axis. Friction generates heat that softens and melts the surfaces together (col. 3, lines 46-53 and FIGS. 4 and 5). Thus, Applicant believes that claims 9, 21, and 31 are patentable over Antoni et al. in view of Lacy et al. Accordingly, Applicant respectfully requests retraction of the Examiner's rejection under 35 U.S.C. §103(a) for these claims.

c. Regarding claims 10, 22, and 32, Applicants claim "at least one annular channel (**408**) located between said first ring (**108**) and said first end (**410/412** (of housing **102**)); and at least one annular channel (**408**) located between said second ring (**108**) and said second end (**410/412** (of housing **102**)); wherein each of said at least one annular channel accommodates a flow of flash material during said spin welding" (page 14, lines 21-23 and FIG. 4 in the specification). Antoni et al. does not teach annular channels for capturing flash from spin welding. It appears that in Lacy et al., lip **70**, shield **48** and spin weld ledge **46** form an annular channel that would capture some flash during spin welding of cap **26** to filter body **22**. But Lacy et al. does not teach an annular channel between the end **410/412** of housing **102** and the ring **108**, but instead teaches an annular channel between the filter body **22** and the end cap **26**. Thus, combining the annular channel of Lacy et al. with the structure of Antoni et al. cannot arrive at applicants invention, nor is there a suggestion in the art to do so. Thus, Applicant believes that claims 10, 22, and 32 are patentable over Antoni et al. in view of Lacy et al. Accordingly, Applicant respectfully requests retraction of the Examiner's rejection under 35 U.S.C. §103(a) for these claims.

d. Regarding claims 11, 23, and 33, Applicants claim "at least one annular channel (**320/406/422**) located between said first ring (**108**) and said first flange cap (**106**); and at least one annular channel (**320/406/422**) located between said second ring (**108**) and said second flange cap (**106**); wherein each of said at least one annular channel accommodates a flow of flash material during said spin welding" (page 15, lines 1-7 and FIG. 4 in the specification). Antoni et al. **does not teach nor suggest** annular channels for capturing flash from spin welding. It

appears that in Lacy et al., lip **70**, shield **48** and spin weld ledge **46** form an annular channel that would capture some flash during spin welding of cap **26** to filter body **22**. But Lacy et al. **does not teach nor suggest** an annular channel between the ring **108** and the end cap **106**, but instead teaches an annular channel between the filter body **22** and the end cap **26**. Thus, combining the annular channel of Lacy et al. with the structure of Antoni et al. cannot arrive at applicants invention. Thus, Applicant believes that claims 11, 23, and 33 are patentable over Antoni et al. in view of Lacy et al. Accordingly, Applicant respectfully requests retraction of the Examiner's rejection under 35 U.S.C. §103(a) for these claims.

e. Regarding claims 55-58, Applicants repeat the remarks made above in Sections B-1 and B-2-c. Antoni et al. **does not teach nor suggest** accommodating residue from spin welding. Lacy et al. does teach accommodating residue from spin welding of the end cap to the end of the filter housing, but **does not teach nor suggest** spin welding the ring to the end of the filter housing, nor the spin welding of the flange cap to the ring, and accommodating residue from both of these welds with structures pertinent to the spin welding, but instead teaches spin welding the end cap to the end of the filter. Lacy et al. does not even have a comparable ring structure. Moreover, Applicants invention requires two separate joinings, forms the seal in a different location than the seal of Antoni et al., and has annular channels in locations not taught by Lacy et al. Thus, combining the teachings of Lacy et al. with the structure of Antoni et al. cannot arrive at applicants invention, nor is there a suggestion in the art to do so. Thus, Applicant believes that claims 55-58 are patentable over Antoni et al. in view of Lacy et al. Accordingly, Applicant respectfully requests retraction of the Examiner's rejection under 35 U.S.C. §103(a) for these claims.

3. The Examiner has rejected claims 50, 51 and 53 under 35 U.S.C. §103(a) as being unpatentable over Eguchi, U.S. Patent No. 5,472,601.

Applicants respectfully traverse. The Examiner asserts that Eguchi teaches a housing (case **2**) with a first end having a ring (stop ring **1**) joinable to the first end of the housing. However, the stop ring **1** of Eguchi is integral to the housing, not joinable to the housing as in Applicant's invention. In Applicant's invention, the flange cap **106** is joinable to the ring **108** (page 5, lines 25-26 and FIG. 4 in the specification), forming a first seal, whereas in Eguchi the flange cap (header, col. 6, lines 45-50) is joinable to the case **2** with no mention of a seal being

formed thereby, though one is inherently created. Eguchi does not teach nor suggest the ring forming a connection between the housing and the end cap.

Applicants claim in independent claim 50 "a first plurality of rounded ridges (**318**) on an upper surface of said first annular anchor and a second plurality of rounded ridges (**318**) on a lower surface of said first annular anchor" (page 12, lines 11-15 and FIGS. 3D and 4 in the specification). The Examiner states that Eguchi does not teach multiple rounded ridges on the ring, but asserts that it would have been obvious to one of ordinary skill in the art that there could be one or more rings having one or more ridges. However, Eguchi, and none of the other prior art cited by the Examiner or proffered by Applicant in Applicant's Information Disclosure Statement give the slightest hint or suggestion of such a structure. To the contrary, prior art stop rings of record have been almost universally uniform in their structure, being square or wedge shaped. None of them show or suggest a plurality of rounded ridges on an upper surface and a plurality of rounded ridges on a lower surface of the ring. Apart from impermissible hindsight, it would not have been obvious to one skilled in the art to develop the multiple rounded ridges on the upper and lower surfaces of the ring structure as invented and claimed by Applicant.

The Examiner asserts that one skilled in the art would round off the sharp edges for safety. As taught by Applicant's invention, the ridges are rounded for purposes of increasing the surface area treatable through surface treatment (**308**), enhancing the effects of modifying the surface energy of the ring to improve its anchoring ability (page 11, lines 8-11 and FIG. 3D), not for safety. Thus, Applicant believes that claims 50, 51 and 53 are not obviated by Eguchi. Accordingly, Applicant respectfully requests retraction of the Examiner's rejection under 35 U.S.C. §103(a) for these claims.

4. The Examiner has rejected claim 52 under 35 U.S.C. §103(a) as being unpatentable over Eguchi, U.S. Patent No. 5,472,601 in view of Antoni et al., U.S. Patent No. 5,236,586.

Applicants respectfully traverse. Applicants repeat the remarks made in Sections B-1 and B-3 above. Eguchi does not teach nor suggest all of the elements of Applicants invention. Therefore combining Eguchi with the inlet and outlet ports of Antoni et al., which are located differently from the inlet/outlet ports of Applicants invention, would not arrive at Applicants invention as claimed in claim 52. Thus, Applicant believes that claim 52 is not obviated by

Eguchi in view of Antoni et al. Accordingly, Applicant respectfully requests retraction of the Examiner's rejection under 35 U.S.C. §103(a) for these claims.

5. The Examiner has rejected claims 1, 5-7, 14, 17-19, 26, 36-38, 45-46, 48-51, and 54 under 35 U.S.C. §103(a) as being unpatentable over Eguchi, U.S. Patent No. 5,472,601 in view of Elgas et al., U.S. Patent No. 5,922,202.

Applicants respectfully traverse. Applicants repeat the remarks made in Section B-3 above. Eguchi does not teach the structure of Applicants invention regarding the connection of the ring to the housing and the ring to the end cap and forming a seal in a location different from Eguchi (claims 1, 14, 26, 45, 46, 50). Eguchi does not teach multiple rounded ridges on an upper and lower surface of the ring (claims 6, 18, 37, 48, 51) nor would it be obvious to do so, nor is safety a motivation for rounded edges. Therefore, combining the air channels of Eguchi with the surface treatment of Elgas et al. would not arrive at Applicants invention (claim 5, 7, 17, 19, 36, 38, 49 and 54), nor is there a suggestion in the art to do so. Accordingly, Applicant respectfully requests retraction of the Examiner's rejection under 35 U.S.C. §103(a) for these claims.

6. The Examiner has rejected claims 47 under 35 U.S.C. §103(a) as being unpatentable over Eguchi, U.S. Patent No. 5,472,601 in view of Elgas et al., U.S. Patent No. 5,922,202 and further in view of Antoni et al., U.S. Patent No. 5,236,586.

Applicants respectfully traverse. Applicant repeats the remarks made above in Sections B-3 and B-5. Claim 47 is dependent upon claim 46, and in view of the arguments in Section B-5 above, combining Eguchi and Elgas et al. with the inlet and outlet ports of Antoni et al. would not arrive at applicants invention as claimed in claim 47. Accordingly, Applicant respectfully requests retraction of the Examiner's rejection under 35 U.S.C. §103(a) for these claims.

7. The Examiner has rejected claims 59-61 under 35 U.S.C. §103(a) as being unpatentable over Eguchi, U.S. Patent No. 5,472,601 in view of Elgas et al., U.S. Patent No. 5,922,202 and further in view of Lacy et al., U.S. Patent No. 6,280,619.

Applicants respectfully traverse. Applicants repeat the remarks made above in Sections B-2, B-3, and B-5. Claims 59-61 are dependent directly or indirectly upon claim 55, and in view of the remarks made above, the cited references **does not teach nor suggest** the structure of Applicants invention, or the multiple rounded ridges **318**, and combining the surface treatment of

Elgas et al. and the annular channels in Lacy et al. to accommodate the residue flash and the radial channels of Eguchi would not arrive at Applicant's invention. Accordingly, Applicants respectfully request retraction of the Examiner's rejection under 35 U.S.C. §103(a) for these claims.

8. The Examiner has rejected claims 12 and 24 under 35 U.S.C. §103(a) as being unpatentable over Antoni et al., U.S. Patent No. 5,236,586 in view of Gizowski et al., U.S. Patent No. 6,432,307.

Applicants respectfully traverse. Applicants repeat the remarks mace above in Section B-1. In view of the remarks made above, Antoni et al. does not teach nor suggest the structure of Applicants invention, and combining the laser welding of Gizowski et al. would not arrive at Applicant's invention. Accordingly, Applicants respectfully request retraction of the Examiner's rejection under 35 U.S.C. §103(a) for these claims.

CONCLUSION:

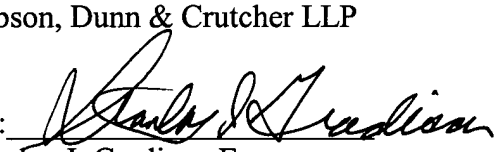
A bona-fide attempt has been made to place this application in condition for allowance. Each of the Examiner's bases for objection and rejection have been addressed and arguments presented to overcome such rejections. The application is now believed to meet all statutory requirements and is thus believed to be in condition for allowance. The Examiner's early indication to that effect is, therefore, courteously solicited.

If a telephone conference would expedite allowance or resolve any additional questions, such a call is invited at the Examiner's convenience.

Applicant does not believe that any fees are due with this response. If this is not the case, please charge any additional fees due, or credit any overpayment to, deposit account 50-0792.

Respectfully submitted,

Gibson, Dunn & Crutcher LLP

By: 

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